CALIFORNIA OCCUPATIONAL GUIDES

Employment Development Department
State of California

OPHTHALMIC LABORATORY TECHNICIANS

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WHAT DOES AN OPHTHALMIC LABORATORY TECHNICIAN DO?

OPHTHALMIC LABORATORY TECHNICIANS, also known as manufacturing opticians, precision optical fabrication technicians, optical mechanics, or optical goods workers, make prescription eyeglass lenses. Some Ophthalmic Laboratory Technicians manufacture lenses for other optical instruments, such as telescopes and binoculars.

Ophthalmic Laboratory Technicians should not be confused with workers in other vision care occupations, such as ophthalmologists, optometrists, and dispensing opticians, as they do not examine eyes, diagnose or treat vision problems, prescribe corrective lenses, or help patients select frames and lenses.

Ophthalmic Laboratory Technicians perform the following tasks to make eyeglass lenses:

- Read prescription specifications.
- Select standard glass or plastic lens blanks and mark them to indicate where the curves specified on the prescription should be ground.
- Place the lens into the lens grinder, set the dials for the prescribed curvature, and start the machine.
- Grind and edge glasses with machine that rotates glasses against a fine abrasive.
- Finish lenses with a polishing machine with a finer abrasive, polishing it to a smooth, bright finish.

Next, the Technician examines the lens through a lensometer, an instrument similar in shape to a microscope, to make sure the degree and placement of the curve is correct. The Technician then cuts the lenses and bevels the edges to fit the frame, dips each lens into dye if the prescription calls for tinted or coated lenses, polishes the edges, and assembles the lenses and frame parts into a finished pair of glasses.

Although some lenses are still produced by hand, Technicians increasingly use automated equipment to make lenses.

In small laboratories, Technicians usually handle every phase of the operation. In large ones, Technicians may be responsible for operating computerized equipment where virtually every phase of operation is automated. Technicians also inspect the final product for quality and accuracy.

WHAT SKILLS ARE IMPORTANT?

Ophthalmic Laboratory Technicians require and use the following skills, knowledge, and abilities:

- Arm-Hand Steadiness – Keeping the hand and arm steady while making an arm movement or while holding the arm and hand in one position.

- Manual Dexterity – Quickly making coordinated movements of one hand, a hand together with its arm, or two hands to grasp, manipulate, or assemble objects.
- Finger Dexterity – Making precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
- Near Vision – Seeing details of objects at a close range (within a few feet of the observer).
- Control Precision – Quickly and repeatedly making precise adjustments in moving the controls of a machine to exact positions.
- Product Inspection – Inspecting and evaluating the quality of products.
- Operation and Control – Controlling operations of equipment or systems.
- Equipment Selection – Determining the kind of tools and equipment needed to do a job.
- Operation Monitoring – Watching gauges, dials, or other indicators to make sure a machine is working properly.

WHAT'S THE WORK ENVIRONMENT?

Ophthalmic Laboratory Technicians work in relatively clean and well-lighted laboratories and have limited contact with the public. Surroundings are relatively quiet despite the humming of machines. At times, Technicians wear goggles to protect their eyes, and may spend a great deal of time standing.

Ophthalmic Laboratory Technicians need to take precautions against the hazards associated with cutting glass, handling chemicals, and working near machinery. Eye-strain can also occur from doing precision work such as this.

Union Membership

According to the Opticians Association of America, so far there has been little or no unionization of Ophthalmic Laboratory Technicians.

WHAT'S THE CALIFORNIA JOB OUTLOOK?

The following information is from the occupational projections produced by the Employment Development Department's Labor Market Information Division:

Estimated number of workers in 1998:	2,600
Estimated number of workers in 2008:	3,200
Projected Growth 1998-2008:	23.1%
Est. openings due to separations by 2008:	400

These figures do not include self-employment.

The number of Ophthalmic Laboratory Technicians is projected to grow at about an average pace compared with all occupations between the years 1998 and 2008. Between 1990 and 1998, the number of Ophthalmic Laboratory Technicians working in California more than doubled, growing from 1,280 to 2,600 workers.

Trends

What is not known is how the advent of laser vision correction surgery will affect the demand of this occupation. Regardless, baby boomers will increasingly require glasses or contacts for age-related vision problems, which should increase the demand for these workers in coming years.

WHAT DOES THE JOB PAY?

California Earnings

Ophthalmic Laboratory Technicians 2001 Wages

Hourly wages range from	$8.67	to	$15.07
Average hourly wage	$12.65		
Average annual wage	$26,319		

Source: Occupational Employment Survey of Employers by EDD/LMID.

Earnings vary greatly according to geographical region. Beginning workers often start at minimum wage and can advance in just a few months. Supervisors and managers can earn substantially more.

Hours

Most Ophthalmic Laboratory Technicians work a five-day, 40-hour week, which may include weekends, evenings, or occasionally, some overtime. Some work part time.

Benefits

Most full-time Technicians receive medical insurance, vacation, holidays, sick leave, and eye-care programs. Larger firms often also offer profit sharing and pension plans.

HOW DO I PREPARE FOR THE JOB?

Education and Training

Nearly all Ophthalmic Laboratory Technicians learn their skills on the job. Employers filling trainee jobs prefer applicants who are high school graduates. Courses in science, mathematics, and computers are valuable; manual dexterity and the ability to do precision work are essential.

Technician trainees producing lenses by hand start on simple tasks such as marking or blocking lenses for grinding, then progress to lens grinding, cutting, edging, and beveling, and eyeglass assembly. Depending on individual aptitude, it may take up to six months to become proficient in all phases of the work.

Technicians using automated systems will find computer skills valuable. Training is completed on the job and varies in duration depending on the type of machinery and individual aptitude. Some Ophthalmic Laboratory Technicians learn their trade in the Armed Forces where they learn optical theory, surfacing and lens finishing, and the reading and applying of prescriptions.

Licensing and Certification

California has no licensure or certification requirement for Ophthalmic Laboratory Technicians.

Continuing Education

Continuing education is not usually required to maintain a position as Ophthalmic Laboratory Technician.

HOW DO I FIND THE JOB?

Direct application to employers remains one of the most effective job search methods. About one third of workers are employed in retail optical stores that manufacture and sell prescription glasses, and another third work in optical laboratories. The remainder work in optical goods wholesalers or in optical laboratories that manufacture lenses for other optical instruments, such as telescopes and binoculars.

Private firms are listed in the yellow pages under Optical Goods, Opticians – Dispensing, and Optometrists. California job openings can be found at various online job-listing systems including CalJOBS℠ at www.caljobs.ca.gov or at America's Job Bank at www.ajb.dni.us.

For other occupational and wage information and a listing of the largest employers in any county, visit the Employment Development Department Labor Market Information Web page at www.calmis.ca.gov. Find further job search assistance from your nearest Job Service office www.edd.ca.gov/jsloc.htm or the closest One-Stop site listed on the California WorkNet site, www.sjtcc.ca.gov/sjtccweb/one-stop.

WHERE CAN THIS JOB LEAD?

Ophthalmic Laboratory Technicians can become supervisors and managers in larger labs. Some Technicians become Dispensing Opticians, although further education or training is generally required. In larger establishments, there are more supervision opportunities as the plant is often divided into inspection, generating (grinding), and layout (optical centering of lenses) departments. In smaller shops, advancement may consist of increases in salary. Occasionally, Technicians start their own businesses.

OTHER SOURCES OF INFORMATION

Opticians Association of America
7023 Little RiverTurnpike, Suite 207
Annandale, Virginia 22003
(703) 916-8856
Fax: (703) 916-7966
www.opticians.org

Employment Projections by Occupation
www.calmis.ca.gov/htmlfile/subject/occproj.htm

Employment and Wages by Occupation
www.calmis.ca.gov/file/occup$/OES$.htm

RELATED OCCUPATIONAL GUIDES

Dispensing Opticians	No. 167
Dental Laboratory Technicians	No. 243

OCCUPATIONAL CODE REFERENCES

SOC *(Standard Occupational Classification)*

Ophthalmic Laboratory Technicians	51-9083

O*NET *(Occupational Information Network)*

Precision Optical Goods Workers	51-9083.01
Optical Instrument Assemblers	51-9083.02

OES (*Occupational Employment Statistics*)

Precision Optical Goods Workers	89917

DOT (*Dictionary of Occupational Titles*)

Precision Lens Grinder	716.382-018
Eyeglass Lens Cutter	716.682-010
Precision Lens Polisher	716.682-018